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# Healthy Aging and Art Therapy

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# Healthy Aging and Art Therapy

**A DISSERTATION**

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Abstract

The purpose of this study was to examine the effects of art therapy on healthy aging in older adults in terms of its promotion of well-being and a better quality of life. Few research studies have been conducted on the Korean American older adult population to investigate the effectiveness of art therapy. The present study was undertaken to quantitatively assess the effect of art therapy on this population using three standardized psychological instruments to measure the dependent variables of affect, anxiety, and self-esteem. An effort was made to understand the physiology of the brain as it relates to art therapy for promoting healthy aging in Korean American older adults. This study showed positive results that support the hypothesis that the art therapy intervention with 50 Korean American older adults promoted healthy aging by reducing negative emotions, improving self-esteem, and decreasing anxiety. Large effect sizes indicated an 84.6% positive change in affect ($r$ = .92) and a 70.6% positive change in state of anxiety ($r$ = .84) for participants in the art therapy intervention group over the control group. Moderate effect sizes of the art therapy intervention indicated positive changes in self-esteem and trait anxiety ($r$ = .75 and $r$ = .74, respectively). Art-making as part of an art therapy intervention promotes continuous dopaminergic stimulation in the brain of the art-maker, who can perceive more emotional experiences during creation. Therefore, art therapy sessions need to be designed for and applied to the older population, and they should target the sharpening of cognitive skills to prevent brain aging, the stimulation of

senses to promote creativity, the cultivation of positive attitudes to improve self-esteem, and the elimination of negative emotions to promote emotional well-being. These factors encompass the promotion of better health for older individuals.

*Keywords:* healthy aging, art therapy, older adults, creativity, brain

## Dedication

This dissertation is dedicated to the loving memory of my father, Sungbang Kim, who inspired me, taught me, and always encouraged me to be a better person by helping others in order to make the world a better place.

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# Chapter 1

## Introduction

The purpose of this study is to understand how art therapy contributes to healthy aging in older adults by promoting well-being and a better quality of life. According to the U.S. Census Bureau (Kinsella & Velkoff, 2001; U.S. Centers for Disease Control and Prevention, 2003), the population of those over 65 years of age numbered 35.9 million in 2003 and will increase 76% to 63.2 million by 2010. After the first baby boomers turn 65 in 2011, a substantial increase in the population over 65 will occur between 2011 and 2030. The older population is projected to grow to 72 million by 2030, at which point it will represent nearly 20% of the total U.S. population. Given these facts, it makes sense to nurture constructive and productive lifestyles for the older population.

The definition of *older adult* varies depending on one's perspective and purpose. For example, the United Nations (UN) refers to the older population as being those who are age 60 and older, and gerontologists also traditionally focus on persons aged 60 years and older (WHO, 2009). Most developed countries in the world, however, consider the elderly to be age 65 and older (Gorman, 1999). Many researchers identify the elderly as "older adults" and subdivide them into categories of "young-old" (ages 65-74), "old-old" (ages 75-84), and "oldest old" (ages 85+) (Hooyman & Kiyak, 2002, p. 15). In this study, when I refer to older adults, I mean those who are age 65 and older.

Most older adults have the conception that "being old" means being hopeless, being dependent, waiting for death, losing family members, being sick, and being bored

(Hooyman & Kiyak, 2002). Stereotyped concepts such as "old age is the worst time of life" are a kind of ageism (Palmore, 1999, p. 4). Ageism is a negative perception of aging and aged individuals; it can be defined as "any attitude, action, or institutional structure that subordinates a person or group because of age or any assignment of roles in society purely on the basis of age" (Traxler, 1980, p. 4). Unfortunately, due to ageism, older individuals easily perceive themselves in the way that society does, even when it devalues them.

According to the World Health Organization (WHO, 1986), *health* is a resource for everyday life, not the objective of living; it is a positive concept emphasizing social and personal resources as well as physical capacities. By examining various social scientists' theories concerning the aging process (Atchley, 1989; Erikson, Erikson, & Kivnick, 1986; Hill, 2005; Rowe & Kahn, 1998; Vaillant, 2002), the concept of healthy aging can be summarized as having a vision of hope about growing old with a positive state of mind as well as minimizing and managing physical age-related declines.

In terms of art therapy, art-making can inspire new energy and reawaken potential in older adults by: 1) reducing negative emotions, 2) improving self-esteem, 3) sharpening cognitive and perceptual skills, 4) stimulating the senses, and 5) regenerating social interaction. Hass-Cohen (2008) states, "We can draw from clinical neuroscience to describe and enhance the therapeutic advantages of arts in action and further illuminate the unique contributions of art therapy to well-being and health" (p. 21). Artwork is a concrete representation of mind-body connectivity, and it contributes to internal feelings of mastery and control (Camic, 1999; Malchiodi, 1998a; Naparstek, 1994). Art-making activities enhance coordination of hand-eye movements and other parts of the body,

improve modulation of body movements, and facilitate concurrent activities between the right and left hemispheres of the brain. Furthermore, art-making can help with balancing physical and mental abilities. In art therapy, discussion and art-making with group members offers a chance for individuals to express their own ideas and feelings via both image and language, and provides a supportive environment to share these feelings and concerns with significant others, including the therapist. Through this process, communication—not only between the group members and the therapist, but also within one's own self—is promoted in order to achieve self-awareness and integration.

**Rationale**

As a licensed and board certified creative art therapist, I worked with a geriatric art therapy group in an adult day health care program in New York City. Adult day health care programs are community-based, long-term care programs designed to provide comprehensive health care in congregate day settings for chronically ill and disabled older adults in the United States (NYAHSA, 2009). There are more than 170 adult day health care programs in the state of New York, serving 12,000 older adults each year (NYAHSA, 2009). My work experience as an art therapist has been quite challenging—not because of the clients' deteriorating physical and mental health, but because of their lack of knowledge about art therapy as a way to promote well-being. Some clients' rigid preconceptions made it hard for them to think of themselves as artists, or even as functional people with feelings. The older adults I worked with seemed easily to accept and admit any physical deterioration related to the aging process. However, they seemed more fearful of facing mental deterioration, which could threaten their memories and

independent daily living. I thus began paying more attention to improving older adults' quality of life.

I have witnessed art therapy playing an important role in elderly clients' ability to maintain health and improve their daily lives physically, psychologically, and spiritually. It has become clear to me that the acts of making art and discussing it—i.e., connecting the created images with one's thoughts and feelings by sharing with the group members—are powerfully worthwhile. Art touched the individuals I worked with, regardless of their education level, age, gender, race, or former occupation, and seemed to allow them access to their inner self with a sense of joy, hope, and excitement. It also gave them the endurance and motivation to follow difficult learning processes, which in turn led to intense experiences of accomplishment and mastery, not only concerning how to create the image they wanted, but also about how to communicate with their inner feelings and ideas. In art therapy, the clients were offered positive experiences and perspectives concerning their aging processes. This experience has taught me that humans need to find a true and effective means of expression and to connect to an inner potential for creativity across all spectrums of difference in age.

Art therapy was one way for me to help older individuals and assist in a healthy aging process. It was interesting to observe that the clients displayed a high interest in art therapy, especially when verbally presented with recent scientific findings regarding how creative expression keeps older individuals' minds sharp and prevents dementia, and how art-making is beneficial for both mind and body in older adults. This shows how eager older individuals are to learn about and improve their health and delay any possible age-related declines in mental functioning, such as Alzheimer's disease (AD). Through arts

and creativity, a variety of behavioral, psychological, and social skills are promoted, as well as seniors' physical health, sensory competency, and mental well-being (Engle & Muller, 1997; Lindauer, 2003; Weisberg & Wilder, 2001). The present study was conducted to provide scientific evidence of how art therapy can contribute to healthy aging and the overall well-being of older adults.

**Significance**

The purpose of this study is to determine whether art therapy intervention can promote healthy aging in Korean American older adults. Measurements were conducted using the Positive and Negative Affect Schedule (PANAS), the State-Trait Anxiety Inventory (STAI), and Rosenberg's Self-Esteem Scale (RSES). An untreated control group was used to compare with the intervention group.

Some research has been conducted on art therapy in geriatric settings and in different cultural settings, such as those of Tibet, China, India, or with Spanish-speaking populations. Few research studies have been conducted on the Korean American older adult population to investigate the effectiveness of art therapy. The present study was undertaken to quantitatively assess the effect of art therapy on this population using three standardized psychological instruments to measure the dependent variables of affect, anxiety, and self-esteem. An effort was made to understand the relation of neuroscientific approaches to art therapy and their contribution to healthy aging in Korean American older adults.

Older adults can benefit from psychological interventions by spending their time in therapeutic pursuits that target the specific issues and needs of each individual, such as promoting feelings of self-worth and a sense of achievement, and reducing depressive

and negative emotions. Art therapy can connect people not only to their inner selves, but also to other people who can share their time and space through the medium of art. Today, so many older individuals withdraw into an aloneness that reflects their feelings of disconnection from the world; as a result, many of them report symptoms of depression, such as helpless feelings, sadness, anxiety, and difficulty sleeping at night (Hooyman & Kiyak, 2002). Anxiety and depression in older individuals can decrease emotional resources and make healthy aging more difficult (Blazer, 2003).

If art therapy can be proven successful in helping to reduce negative emotions including anxiety, in promoting positive feelings, and in helping to improve self-esteem, more adult day health care programs and senior centers can implement art therapy as a useful tool to help older adults achieve psychological and physiological well-being. The effectiveness of art therapy cannot be determined through one research study conducted within one ethnic group, but this study serves as an initial attempt to promote quality of life and improve older adults' healthy aging process with art therapy.

**Research Question and Hypotheses**

The research question addressed in this study is how the art therapy intervention contributes to healthy aging in Korean American older adults. In answering this question, the following three hypotheses will be explored and examined.

1. There will be a significant change in positive and negative affect for the art therapy intervention participants, compared to a control group of Korean American older adults.

2. The art therapy intervention will significantly decrease state-trait anxiety in Korean American older adults who participate in the treatment, compared to a control group.
3. The art therapy intervention participants will have improved self-esteem following completion of the art therapy program, compared to a control group of Korean American older adults.

**Summary**

This study aims to investigate the effect of the art therapy intervention on Korean American older individuals. Based on the results of the psychometric assessments PANAS, STAI, and RSES, it hopes to present a new approach to healthy aging using art therapy with the older population. In Chapter 1, I presented an introduction to the research study, the rationale, the significance of the study, and the research question and hypotheses. In Chapter 2, a review of the literature will be presented.

# Chapter 2

## Literature Review

This chapter describes the literature relevant to this study. It includes an overview of psychological concepts of aging and adult development, neuroscience literature on the brain and its aging, and empirical research findings on art therapy. I have chosen to study these frameworks to promote healthy aging and psychological well-being in older adults through the use of art therapy that is based on the understanding of human mind and body interactions, imagery, and self-expression. Art therapy is a medium in which mind-body communication is encouraged and embraced by way of imagery, exploration, and expression of one's ideas and feelings.

The first section of this chapter will outline existing studies on healthy aging from perspectives such as successful aging and positive aging. The continuity theory will be outlined using Erikson's stages of human development. In the second section, neuroscientific approaches to healthy aging will be explained in light of the mind-body connection in the brain. Art therapy will then be reviewed in terms of its theoretical and practical applications for healthy aging, focusing especially on a critical review of the art psychocybernetic therapy model. In the last section, a pilot study conducted on Korean American older adults using three standardized scales—the Satisfaction With Life Scale (SWLS), the Positive And Negative Affect Schedule (PANAS), and the Oxford Happiness Questionnaire (OHQ)—will be reported.

Reviewing related literature on art therapy, it seems clear that this therapy for older adults is an important component of promoting psychological well-being and quality of life for healthy aging.

## Healthy Aging

**Healthy, successful, and positive aging.** *Healthy aging* is defined as the state in which an older individual is "both contented and vigorous as well as not being sad or sick or dead" (Vaillant, 2002, p. 187). This concept is based on the World Health Organization's definition of *health*, established in 1948 (WHO, 2006): physical, mental, and social well-being, not merely the absence of disease or infirmity. The Ottawa Charter for Health Promotion (WHO, 1986) expanded the definition of *health* to indicate that it is a resource for everyday life, not the objective of living, and a positive concept that emphasizes social and personal resources as well as physical capacities.

The concept of successful aging describes older people who experience little or no age-related mental and physical declines into their 70s and 80s (Rowe & Kahn, 1998). The definition of *successful aging* is to grow older with low risk of disease and disease-related disabilities, with high mental and physical functioning, and with active engagement in life. In successful aging, however, age-related declines are still present (Seeman et al., 1994). Although it is meaningful to understand the concept of successful aging, it may not reflect the nature of aging for most people in our society. There would not be many older adults who can describe their aging process as "successful aging" based on the definition offered by Rowe and Kahn (1998) due to the impact of the deteriorating physical and psychological aspects of aging. According to the U.S. Centers for Disease Control and Prevention (2003), the older population, including both men and

women over 70 years old, experience chronic conditions such as hypertension (over 40%), diabetes (over 11%), arthritis (over 49%), heart disease (over 19%), and stroke (over 7%). Additionally, about 50% of older adults experience more than one chronic condition and the complications of accompanying symptoms. Most older individuals expect to experience a decline in physical and psychological functioning. Normal aging or usual aging needs to be differentiated from aging with disease. The definition of *successful aging* is more focused on the ideal concept of aging, which aspires to high mental and physical functioning without disease (Rowe & Kahn, 1987).

According to the American Psychological Association (APA, 2005), elderly people with medical problems have higher rates of depression than those who are medically well. Fifty to 70% of all primary care medical visits are related to psychological factors such as anxiety, depression, and stress. About 15% of older adults become chronically depressed. The symptoms of depression often coexist with those of other serious illnesses, including heart disease, diabetes, cancer, and Parkinson's disease. Symptoms of depression are also often mistakenly viewed as part of the normal aging process or as a consequence of health problems and are therefore left untreated (Lebowitz et al., 1997). Thus, depression in the older population is not a part of normal aging, and any depressive symptoms should be treated to promote healthy aging in older individuals.

The concept of positive aging, taken from positive psychology, broadened the notion of successful aging by infusing it with psychological perspectives (Csikszentmihalyi, 1990; Seligman & Csikszentmihalyi, 2000). Positive aging includes not merely avoiding any physical declines, but also the ability to reflect any vital reactions to change, disease, and environmental imbalance in the aging process. Positive

aging includes natural parts of the aging process: declines, losses, and the death of other people and oneself (Valliant, 2002). The concept of positive aging should include the realities of the aging process and focus on the idea that there are actions an older individual can take to enhance his or her well-being, even in the presence of age-related decline and loss (Hill, 2005).

To summarize, the concept of positive aging presents the premise that people make choices and engage in coping even when experiencing age-related limitations both physically and psychologically. When people seek happiness and well-being in later life, it seems more related to their state of mind than to their actual limitations. Therefore, positive aging is the essence of healthy aging in the older population.

Positive aging requires disciplined behavior, and well-being and better adaptation in later life result from this discipline (Wister, 2003). For example, heavy smoking is not compatible with positive aging, and controlling the smoking habit would require self-discipline. No one can remain entirely free from age-related declines and there are few individuals who experience successful aging without any age-related physical symptoms. The concept of positive aging, however, allows each individual to choose his or her own attitude towards growing old and to maintain positive perspectives even when experiencing the physical limits of old age.

There are individuals who make independent choices to keep their positive perspectives even with age-related declines (Valliant, 2002). When older individuals cultivate positive mindsets in their aging processes, they experience a sense of well-being and life satisfaction whether or not they are physically healthy.

There are four elements of a positive perspective on aging (Hill, 2005). First, one must mobilize resources to cope with age-related declines. Second, one must make choices to promote well-being. Third, one must be flexible. Fourth, one must focus on the positive side of growing old. Thus, it is important for the older population to maintain positive emotions throughout the aging process in order to achieve a sense of well-being and life satisfaction.

Intriguing research performed by Silver (1999) shows that there were no significant differences between independently living seniors and young adults in terms of attitudes and cognition. These findings challenge false beliefs on aging and support the view that cognitive skills and emotions tend to remain stable even into old age. Based on this study, the fear of losing autonomy negatively impacts successful aging for independent seniors. The implication of Silver's study supports and emphasizes that maintaining physical and psychological well-being as an independent adult influences healthy aging.

Thus, according to the relevant literature on the psychological concepts of the aging process, healthy aging can be understood to mean having a vision of hope about growing old with a positive state of mind as well as minimizing and managing physical age-related declines.

**Continuity theory and integrity.** Older people apply their own continuity strategies to adapt to changes related to the aging process (Atchley, 1989). When older adults make adaptive choices, they attempt to maintain existing internal and external structures as the primary adaptive strategy for dealing with aging. Internal continuity is based on the sense of self acquired from past life experiences, such as life values,

preferences, attitudes, and character. On the other hand, external continuity is related to environment, such as activities, skills, relationships, and communities. External continuity is "a logical result of leading to one's strengths to get optimum satisfaction from life" (Atchley, 1989, p. 185). Both internal and external continuity influence each older individual's aging process. The sense of internal and external consistency in older adults promotes healthy ideas in the aging process, even when these individuals encounter unexpected life issues. Despite the social world's negative orientation toward aging, there are many older individuals who can maintain positive attitudes that serve as the basis for their life structure, daily decision-making, and vision for the future.

Older adults are resilient because they have encountered numerous surprises, contradictions, and paradoxes in life (Atchley, 1989). With this resilience, they are able to manage and cope with stress in life. The life experience of older individuals is a powerful resource for coping, as they have discovered that coping is easier with the support of others.

In positive aging, it is inevitable that one accepts the reality of age-related deterioration and change, and this ability is based on the life reflection of the older individual (Hill, 2005). Continuity theory broadens the scope of positive aging to encompass the quality of aging and the life experiences and adaptation of older individuals. To summarize, older adults can maintain and continue their healthy lifestyles based on rich life experiences by maintaining a positive attitude and practicing healthy lifestyles in order to actualize healthy aging in their aging process.

Erikson's (1963) theory of human development supports the continuity theory regarding the psychological development of the older adult. Each life stage develops

through the acquisition of a specific aspect of maturity, such as hope, will, purpose, competence, fidelity, love, caring, or wisdom. Maturation is an ongoing process in adulthood and it continues in later life as people try to resolve life crises throughout the lifespan.

Old age can be described as a dynamic struggle to balance the emotional experiences of integrity and despair (Erikson, Erikson, & Kivnick, 1986). Integrity is characterized by acceptance of and belief in one's own value and efficacy, while despair is characterized by hopelessness due to impending death and physical and cognitive declines. If the struggle is successfully resolved in old age, a state of wisdom is acquired in the form of maturity. Erikson (1963) explains that the mature adult in the stage of integrity vs. despair can reflect on his or her own life with the goal of evaluating its meaning and purpose. He believes that wisdom as maturity helps a person to reconcile his or her own reality with what the person desires to accomplish throughout the rest of life.

"The ability to acquire wisdom in old age not only has a positive impact on those who encounter wise persons, but also means that older people who possess wisdom know how to age in a more satisfying way" (Hill, 2005, p. 71). The wisdom is related to positive aging and the coping skills that are accessed through positive aging to maximize well-being and life satisfaction in old age. If development is successful in this stage, life can be positively perceived with appreciation and peace of mind. The positive agers are people who continue to improve their own senses of self in later life with consideration for others.

To summarize, psychological development continues into old age and, when successful, promotes the internal and external consistency necessary for coping with age-related concerns and stress by providing a positive attitude and perspectives throughout the rest of life.

## Healthy Aging: Neuroscientific Approaches

**Mind-body connection in brain.** The study of mind-body connections reveals the interplay of experiences, emotions, behavior, and physical health (Achterberg et al., 1994; Cousins, 1979; Hass-Cohen, 2008; Pinker 1997) and contributes to a better understanding of inner feelings of mastery and control (Camic, 1999; Malchiodi, 1998; Naparstek, 1994), which are important components of the healthy aging process. Cohen (2005) emphasizes the importance of a "sense of control" over aging, saying, "Older persons who pursue activities in which they experience a sense of control and mastery are healthier both physically and mentally than those who do not" (p. 27). He presents a research study on the mind-body connection, which shows that positive emotions boost levels of beneficial immune system cells. He describes two types of cells, T cells and natural killer cells, which are large white blood cells that attack tumor cells and infected body cells. Both respond to positive feelings in the body.

Malchiodi (2003) emphasizes art therapy as a mind-body intervention by stating that images and image formation function to reframe an individual's experience, emotion, and response to life events. Through drawing, painting, or collage in art-making, the art-maker rehearses and experiences a desired change of emotions, thoughts, and ideas in the form of a tangible object. Gabriel et al. (2001) researched the feasibility of introducing art therapy as a supportive intervention for adult bone marrow transplant (BMT) patients

in isolation, and found that art therapy effectively intervened to strengthen their positive feelings, alleviate their distress, and clarify their existential/spiritual issues.

Nucho (2003) explains that the psychocybernetic approaches of art therapy can cultivate positive feelings along with a sense of control and mastery by way of the art-making process and its reflection during discussion with an art therapist. It promotes stimulation in the brain where the mind and body connect. Hobson (1994) describes the mind as the work of the brain, and states that they are strongly tied to each other. Wilson (1998) characterizes the mind as a self-organizing organ "which lingers to spawn additional thought and physical activity" (p. 110). These examples reveal how strongly the mind and body are related to each other and show the possibilities of promoting health by stimulating the brain. Kaplan (2000) argues that the strong connection between the mind and the brain promotes mental health by way of the brain-stimulating work of art therapy.

**Brain functioning and structure.** The 1990s have been called the "Decade of the Brain" (Bush, 1990), for this decade opened new possibilities for understanding the mind and its impact on our body in many different disciplines by using neuroscientific approaches. The brain is the place where the physical body and mental functioning are connected and communicate with each other. The Society for Neuroscience explains that the brain controls all body activities, from heart rate and sexual function to emotion, learning, and memory. It influences the immune system and the individual's response to medical treatment (Carey, 2002). The brain works to shape our thoughts, hopes, dreams, and imagination; it is truly "what makes us human" (Carey, 2002, p. 2).

In a discussion of healthy aging, it helps to understand brain structure. There are a hundred billion neurons in the brain, and each of these neurons is connected to others by branching out like trees known as axons and dendrites (Ratey, 2001). They terminate in small junctions known as synapses. Synapses are the places where neurons are connected and most learning and development occurs. The plasticity of the synaptic connections explains the relationship between learning and brain change. When neurons "fire to wire together" to store knowledge, memory forms in the brain, making learning possible. Learning links neurons in new patterns and stimulates them "to grow new synaptic connections" where messenger chemicals, called neurotransmitters, work toward communication (Cohen, 2005, p. 6) (See Figure 1).

There are well-known transmitters—dopamine, serotonin, and endorphin—which are essential factors in feeling satisfied and rewarded. Dopamine is related to the reward, which is obtained from the appreciation of beauty and increased sensitivity to sensory stimulus (Kulisevsky, Pagnabarraga, Marinez-Korral, 2009). Both serotonin and endorphin are related to a more peaceful, pleasant, or calm mood in individuals (Ratey, 2001).

The more neuronal activity is increased by brain usage, the more dendrites and synaptic activity increases. New learning and life experiences stimulate neurons to make more new connections by communicating with the chemical messengers, neurotransmitters (Carey, 2002; Cohen, 2005; Ratey, 2001). The natural consequences of new neuronal connections are changes in the amount or kind of neurotransmitters. As a result, the brain becomes heavier by thickening brain cell bodies, axons, and dendrites (Hass-Cohen, 2008; Mechelli et al., 2004; Ratey, 2001; Stein et al., 2006). Heavier

brains are less vulnerable to genetic brain aging diseases, such as Alzheimer's disease, and may better compensate for brain injury (Allen, Bruss, & Damasio, 2005; Satz, 1993). Neurons are constantly competing with each other in the synapses throughout a person's lifetime to aid in communication between the mind and body by sending neurotransmitters (Carey, 2002; Morris, Ahmed, Syed, & Toone, 1993; Park, 2002; Ratey, 2001). If intervention activities based in scientific knowledge can promote the establishment of new connections in the brain—by changing inner neuronal connections, the shape of synapses, or physiological alterations—they can be clinically applied to support healthy aging in older adults.

Most neuroscientists believe that the brain can remain relatively healthy and fully functional as it ages, and that diseases are the cause of the most severe decline in memory, intelligence, verbal fluency, and other tasks, rather than aging itself (Carey, 2002). "The brain actively grows and rewires itself in response to stimulation and learning," even in old age (Cohen, 2005, p. 7). The brain mysteriously accomplishes much more than what the neuroscientists can explain, and many neuroscientists and psychologists (Carey, 2002, Cohen, 2005; Gardner, 1984; Neisser, 1976; Ratey, 2001) agree that it is not yet fully understood how neurons, neurotransmitters, and electrical activities add up to total mental functioning.

**Brain and aging.** Many neuroscience resources attempt to describe the relation between the brain and aging, but the cause of brain aging still remains a mystery, despite great progress made in the disciplines of genetics, biochemistry, and cell biology (Ratey, 2001). A common symptom of brain aging is memory loss, and scientists explain the physiology of brain aging as neuronal loss due to the decrease of neurotransmitters,

neuron atrophy, and a reduction in blood flow to the forebrain (Ratey, 2001; Tabloski, 2006). In the aging process, Alzheimer's disease (AD), a senile dementia, can be developed when (Ach-releasing) neurons die. Neurons are the factory for neurotransmitters, and the majority of neurotransmitters are involved in AD. In the forebrain, parts of the hippocampus atrophy as one ages, and this is strongly correlated to problems with memory. Although few neurons in the brain are lost overall, the forebrain—especially the hippocampus (See Figure 2), which plays an important role in memory—is affected greatly. With the decrease of neurotransmitters due to neuronal loss, the hippocampus' synaptic plasticity hardens, causing memory loss (Ratey, 2001).

It is helpful to understand dementia from a neuroscientific perspective to see if it can be prevented in any way. The early symptoms of dementia are "forgetfulness, memory loss, disorientation to time or place, and difficulty with concentration, calculation, language and judgment" (Carey, 2002, p. 36). It is a progressive illness and the affected individual loses self-control and self-care ability.

It is one of the leading causes of death in the U.S.; 100,000 people die of it per year and, due to this fact, the symptoms of dementia become serious stress factors for the older population (Carey, 2002). Although most older individuals seem unable to recall some of their past experiences, this is not because the memory has been erased. In most cases, it is because the person simply cannot initiate the process of retrieving it (Ratey, 2001).

In the normal aging process, some memory loss is common, but it is different in dementia. In normal aging, individuals may experience some memory problems in retrieving words that have not been used in a while, but each individual ages differently.

Statistics indicate that “no more than 10 to 15 percent of people from age 65 to 100 show symptoms of senile dementia” (Ratey, 2001, p. 217).

Recent studies (Ball, Helmers, Jobe, Leveck, & Marsiske, 2002; Wilson & Bennett, 2003) strongly support the idea that neural plasticity endures across the lifespan and that cognitive environmental stimulation is important for the enhancement and maintenance of cognitive functioning, even in old age. Mental activities can alter the structure of the brain by increasing cerebral blood flow, and it is possible to support the improvement of cognitive performance even in old age.

One of the most exciting discoveries in neuroscience is the brain’s ability to grow new neurons and effect changes in neuronal connections in a few specific regions, such as the hippocampus, through old age (Ratey, 2001). This supports an optimistic vision for “the brain’s potential in the second half of life” (p. 13). It therefore seems possible to prevent and delay brain aging in some ways, either by strengthening synaptic connections, thus increasing cerebral blood flow to enhance cognitive brain functioning, or by developing stress management skills to reduce emotional disturbance. There are many well-known creative artists who were active and productive in their old age, such as Pablo Picasso, Marc Chagall, Georgia O’Keeffe, Grandma Moses, and Louise Nevelson. These individuals stand against the popular conception of aging as a decline of functioning and loss of cognitive ability by being active, creative, and productive in their late life. The relationship between creativity and brain functioning needs to be further investigated in order to promote healthy aging in the older population.

**Brain, art-making, and creativity.** An understanding of clinical neuroscience serves to illuminate the therapeutic benefits of art therapy for well-being and better health

(Hass-Cohen, 2008). Artwork is a concrete representation of mind-body connectivity, and it contributes to internal feelings of mastery and control (Camic, 1999; Malchiodi, 1998a; Naparstek, 1994). Art-making activities enhance the coordination of hand-eye movements and other parts of the body, the modulation of body movements, and concurrent activities between the right and left hemispheres of the brain. Furthermore, they can help balance physical and mental abilities. Images are "a bridge between body and mind, or between the conscious levels of information processing and the physiological changes in the body" (Lusebrink, 1990, p. 218). The increasing understanding of the brain's hemispheres and their interaction has been beneficial in the application of clinical art therapy.

It is well known that the right brain is the center of intuition and creativity and the left brain is engaged more with logical thinking and language. Recent research in neuroscience, however, corrects the notion that both hemispheres are always involved in mental activity (Ratey, 2001; Hass-Cohen, 2008). For example, when art is made, such as in painting, drawing, and clay-making, or when imagination is employed in the form of creative thought, both the right and left hemispheres function together. Researchers (Gardner, 1984; Ramachandran, 1999) seem to agree that both the right and left hemispheres of the brain work together in artistic expression, and the drawings created by people with damage to specific areas of the brain support this conclusion (Malchiodi, 2003). There is further neuroscientific evidence regarding the brain and art-making. For example, the meaningful stimulation related to a person's experiences and expectations is important for the prevention of ill health and the increase of emotional well-being in elderly people (Wikström, Theorell, & Sandström, 1993). Other researchers (Noice,

Noice, & Staines, 2004) executed a short-term intervention with the elderly to enhance cognitive and affective functioning, and conclude that older adults should engage in novel activities because novelty seems to promote cognitive health. What these researchers used as a medium was theater training, but this possesses the same creative value and requires similar imaginative work by the brain as in most art-making.

A recent study (Chávez-Eakle, Graff-Guerrero, García-Reyna, Vaugier, & Cruz-Fuentes, 2007) provides evidence of differences in brain cerebral blood flow (CBF) between highly creative individuals and average control subjects while performing a verbal task from the Torrance Tests of Creative Thinking. Subjects with high creative performance showed greater CBF activity in both the right and left parts of the brain, thus confirming bilateral cerebral contribution. The CBF in both the right and left hemispheres of the brain are involved in cognition, emotion, working memory, and novelty response. These findings suggest an integration of perceptual, volitional, cognitive, and emotional processes in creativity. The higher CBF found in particular brain regions of highly creative individuals during the performance of a creative task provides evidence of a specific neural network related to the creative process. This can be applied to creative art-making in art therapy to promote CBF in the brain and its preventive function in the healthy aging process.

A recent research study presents the relation between dopamine, one of the neurotransmitters, and artistic production. Dopamine is depleted in Parkinson's disease (PD), a degenerative disorder of the central nervous system. When a PD patient was treated with a dopamine-enhancing drug, the patient was positively influenced, resulting in increased motivation and reward-seeking activities, including painting (Kulisevsky,

Pagonabarraga, & Martinez-Corral, 2009). Due to the role of dopamine, the patient's painting style was different, as the individual reported that the change was related to the emotional experience during the creative art-making process. This raises the possibility that the functioning of neurotransmitters is closely related to art activities and emotional perception, a notion which can be applied to clinical art therapy approaches with older adults.

**Art Therapy for Healthy Aging**

Creating a work of art provides the client with a vehicle for self-expression, communication, and growth (Franklin, 1992). "The common ground for all arts therapies includes the focus on non-verbal communication and creative processes together with the facilitation of a trusting, safe environment within which people can acknowledge and express strong emotions" (Payne, 1993, p. xi).

Researchers (Achterberg et al., 1994; Hass-Cohen, 2003; Kaplan, 2000; Lusebrink, 2004) recognize art therapy to be "an intervention that facilitates the expression of mind-body connectivity through the remediation of acute and chronic stress" (Hass-Cohen, 2008, p. 26). Art is one of the most powerful ways of expressing many different kinds of life experiences, and it contributes to mental development and social interaction. Dewey (1958) writes, "possibilities are embodied in works of art that are not elsewhere actualized" (p. 255). He believes that art is so fundamental to human experience that "without the arts the experience of volumes, masses, figures, distances and direction of qualitative change would have remained rudimentary" (p. 200). "Thinking calls for images, and images contain thought. Therefore, the visual arts are a homeground of visual thinking" (Arnheim, 1969, p. 254). Some of the therapeutic

benefits of art include: gaining a sense of connection and control between internal and external reality, experiencing feelings of mastery by giving form to and integrating conflicting feelings, and satisfying creative and expressive urges by utilizing various art materials. Art materials challenge the art-maker's senses—not only physically by seeing and touching them, but also emotionally by exploring the feelings they generate—to express his or her inner state of mind. The art materials thus become a method of connecting the art-maker to the real world in an ongoing, dynamic process (Betensky, 1995; Cath, 2001).

When promoting healthy aging in the older population, it is important to create a balance between the art-maker, the art materials, and the art therapist. The sensitive use of art activities can stimulate the memory of forgotten or repressed life experiences, and thereby promote the personality reorganization of the life review process (Zeiger, 1976). The role of the art therapist is important. The therapist should be not only a supportive presence, but also one who encourages the resolving of problems by way of life review (Butler, Lewis, & Sunderland, 1998). To effectively facilitate the art therapy process, the development of a positive therapeutic relationship between client and therapist is critical (Wadeson, 1987). It is essential for the art therapist to take a positive attitude for the older individual to promote healthy aging with creative art-making processes. It is not appropriate to approach the problems of aging with the purpose of correcting them. Instead, the focus should be on finding "a workable social and theoretical perspective to describe what is healthy and adaptive during this remarkable stage" (Kerr, 1999, p. 37).

It is a fundamental strength of older individuals that they have complex neural architecture in the brain which has been built over years of experience and practice in

daily living (Cohen, 2005). The more complex the architecture of the brain, the more it resists degeneration by injury or disease. Old adults can actively maintain, build, and reshape their brains by continuing to learn and have new experiences for more effective and creative tasks in old age.

The body responds to mental images as though they were really seen. The visual cortex of the brain can be activated by mental imagery from both the external world and the imagination (Christian, 2008). There are profound reasons for creative art therapists to provide interventions that encourage creative imagination, because these mental actions stimulate the brain to bring about positive changes, i.e., stronger connections between neurons. This understanding of brain stimulation provides creative art therapists with concrete scientific reasons why it is important to create a rich and challenging environment for their clients. This helps establish strong and extensive synaptic connections, which is where a great deal of the neurotransmitters' work occurs throughout the therapy process, encouraging more changes in emotional perception.

It is essential for therapists to respect the wisdom of older adults when encouraging their creative process in art therapy (Shore, 1997; Spaniol, 1979). The therapist should be able to provide good quality and age-pertinent art materials and background music to promote respect and dignity for older adults (Wald, 2003). In terms of the goals of art therapy for older individuals, it is important to provide art activities with which the client is able to sense a feeling of accomplishment, control, and mastery. Older individuals should be able to explore and express their ideas and feelings, thus promoting a positive sense of self and integrity. The art therapy sessions should

encourage the older adults to experience reminiscences and life review processes within a safe group environment in order to gain recognition and social support (Wald, 2003).

Creative activities promote better health by stimulating the brain, reducing stress, and promoting balanced emotion, and they trigger positive changes in the body. Some preliminary findings show that sustained creativity enhances recovery from infections and injuries as well as reduces the pain or discomfort of chronic conditions such as arthritis (Cohen, 2005).

**Art psychocybernetic therapy.** The psychocybernetic model (Nucho, 2003) is a new model of art therapy. In this model, the concept of cybernetics, which concerns the flow of information that organizes the goal-directed activities of various systems, is incorporated into art psychotherapy. Its focus is to understand the phenomena of imagery and its communication. This model of art therapy handles images therapeutically, images which are created in both spontaneous and deliberate ways to deal with the art creator's personal experiences. The images are understood as an encoded language in the mind that is not a linguistic language. Both images and language are functionally connected in terms of cognitive function in the brain, and both are needed to improve one's well-being (Nucho, 2003).

In the psychocybernetic model of art therapy, simple art materials are prepared in order to stimulate the imagery of the patient and promote the expression of imagery in a visual format. Moreover, art materials, used in the exchange of ideas and feelings of human cognition in the brain, promote self-expression and self-understanding. Through art-making, life experiences can be sorted out, examined, expressed, integrated, and understood better than before (Nucho, 2003).

Each human being uses two types of symbolic processes: the primary process of thought, which easily appears in fantasy, imagery, and dreams, and the secondary process of thought, which is rational and logical. It is important to synthesize the primary and secondary processes of thought to attain high levels of creativity and originality (Arieti, 1976).

Any life experience is received through both dominant and non-dominant ways of cognition (Nucho, 2003). Dominant cognition includes verbal, analytical, and rational forms of thinking, so-called primary process thought. Non-dominant cognition includes intuitive, holistic, visual, and spatial forms of thinking, so-called secondary process thought. When processing information, the two cerebral hemispheres of the brain are engaged. When making art, such as by painting, drawing, and sculpting, as a means of delivering one's thoughts and feelings with physical action, both cognitive processes are integrated. During art-making, the neuromuscular faculties are activated in cognition to promote more personally engaged expressions. The visual expression in imagery through art helps clients to acknowledge feelings that they need to deal with in reality (Nucho, 2003).

Here is an example to help us understand the benefit of using visual images in therapy: While the statement "A person runs" does not reveal any details such as the sex, age, size, or speed of the runner, an image created to represent the statement could convey much more detailed information, including one's attitude toward the situation (Piotrowski, 1953).

In the psychocybernetic model of art therapy, an art therapy session has four phases: 1) the unfreezing phase, to prepare the clients for the session; 2) the doing phase,

in which the actual art-making takes place; 3) the dialoguing phase, in which the clients become connected with their own artwork and its meaning and reflect on their experience with both the artwork and the therapist; and 4) the ending and integrating phase, in which the therapy session is terminated and the therapeutic relationship ends with integration.

An empirical study (Nucho, 2003) was conducted on the psychocybernetic model of expressive therapies, including art therapy, music therapy, and exercise therapy. Each expressive therapy was compared with verbal psychotherapy, chemotherapy, and a no-treatment control group. The outcome of the study proves the advantages of the psychocybernetic approach to art therapy for older individuals due to its stimulation of cognition and balanced emotion, which promotes integration with the therapist and the group.

**Summary**

In reviewing the literature on healthy aging and art therapy, it becomes clear that it is essential for society to prepare for healthy aging by promoting more opportunities in art therapy that are based on scientific knowledge and empirical research data.

What is the role of art therapy in the older population and what does art therapy with older adults do for their health? When I encountered information about the fast-growing older adult population from the U.S. Census Bureau in 2004, my research question emerged: In which ways can art therapy contribute to healthy aging, and how effective can the art therapy intervention be in promoting healthy aging in older adults?

This literature review has enriched my understanding of healthy aging and its related terms, such as successful aging and positive aging. Many social scientists (Vaillant, 2002; Rowe & Kahn, 1998; Hill, 2005; Atchley, 1989) have tried to define the

aging process with the intent of providing a more positive outlook than is offered by the traditional stereotype of aging.

Many neuroscientists (Carey, 2002; Cohen, 2005; Hass-Cohen, 2008; Ratey, 2001) claim that understanding mind-body connections plays a key role in promoting health, both physically and psychologically. Creative arts therapies, such as art, music, dance, and movement, affect health via the mind-body connection, stimulating the brain to reduce stress and promote a positive self-concept (Cohen, 2005).

In reviewing the literature (Ball, Helmers, Jobe, Leveck, & Marsiske, 2002; Wilson & Bennett, 2003) concerning the possibility of active brain plasticity between neurons in old age, I, as an art therapist, became strongly interested in conducting research on the physical and psychological benefits of art therapy with the older population.

Many researchers (Achterberg et al., 1994; Hass-Cohen, 2003; Kaplan, 2000; Lusebrink, 2004; Nucho, 2003) acknowledge that there are ways to promote healthy aging with art therapy. Art therapy can contribute not only to the emotional components of healthy aging, but also to its physiological components, by increasing cerebral blood flow in the brain and developing new connections in synapses with neurotransmitter communication. Art therapy stimulates both the right and left brain hemispheres and promotes better health.

**Pilot Study Report**

A pilot study was designed and conducted to determine whether or not an art therapy intervention contributed to healthy aging in Korean American older adults. A total of 44 participants who scored 25 or higher on the Mini Mental Status Exam

(MMSE) (Folstein, Folstein, & McHugh, 1975) at screening were randomly assigned to either an intervention group or a control group. Twenty-two participated in the art therapy intervention group and 22 participated in the control group. The participants were recruited from an adult day health care program in New York City. Each participant completed the following three standardized tests pre- and post-session: 1) the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993), 2) the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), and 3) the Oxford Happiness Questionnaire (OHQ) (Hills & Argyle, 2002). The intervention group was asked to participate in six weeks of twice-weekly art therapy group sessions. The control group was not provided with any art therapy sessions or art activities, but rather spent their time reading newspapers, playing board games, and watching television.

The results showed a significant decrease in negative affect on selected PANAS items for the art therapy participants as compared to the control group. Participants in the intervention group showed greater positive change after the six weeks of art therapy sessions. However, the results showed that changes in the total scores of SWLS were not significantly different between the intervention group and the control group.

This study had positive results supporting the hypothesis that the art therapy intervention for Korean American older adults promoted healthy aging by reducing negative emotions. There was a slight difference between the intervention group and the control group in terms of the SWLS, and significant group differences in the PANAS and OHQ. The art therapy intervention group scored higher on measures of psychological well-being to reveal that art therapy promoted psychological well-being by decreasing the

"jittery" affect of negative emotions with the adjusted alpha. Prior to the art therapy intervention, there was no significant difference between the intervention group and the control group on the three psychological tests, SWLS, PANAS, and OHQ. This suggests that art therapy contributes to healthy aging by decreasing negative emotions in older individuals.

Based on this pilot study experience, the decision was made to undertake a follow-up study to assess the impact of art therapy on healthy aging in the Korean American older population using a larger sample size and two other psychometric assessments, the State-Trait Anxiety Index (STAI) and the Rosenberg Self-Esteem Scale (RSES).

# Chapter 3

## Methods

This chapter will outline the method used to examine the effectiveness of the art therapy intervention in promoting healthy aging in Korean American older adults. This research study involved a pre-test/post-test control group design and included the random assignment of subjects to either an art therapy intervention group or a control group. Prior to the intervention, each participant completed a demographic questionnaire and informed consent form.

### Participants

The sample for this study consisted of 50 Korean American older individuals from two Adult Day Health Care Programs (ADHCP) in Northern New Jersey and New York City, where many Korean American older adults are registered in ADHCPs. The term *Korean American* indicates males and females who are Americans of Korean descent. The ADHCPs provide basic medical monitoring, such as vital signs, nursing consultation, and medication supervision, with daily activities such as arts/crafts, board games, and socialization. The two ADHCPs selected for this study had never before provided art therapy sessions with certified/registered art therapists, but had provided recreational activities led by a certified nurses' aide or recreational coordinator.

Participants were selected for the study using the Mini Mental Status Exam (MMSE) (Folstein, Folstein, & McHugh, 1975). All of the registrants in the two ADHCPs were screened with the MMSE by registered nurses either upon their admission

or during their semi-annual assessment. At both ADHCPs, participants who scored higher than 25 out of 30 on the MMSE within a six-month period prior to the study were accepted and given informed consent for the study. They were randomly assigned to participate either in an art therapy intervention group or a control group. Participants in both the art therapy intervention group and the control group were rewarded with a small gift card to a local pharmacy at the conclusion of the study as a token of appreciation. The ages in the Art Therapy Intervention Group (AG) ranged from 69-87, with a mean age of 77.64 (*SD* = 5.51). The ages in the Control Group (CG) ranged from 72-86, with a mean age of 78.76 (*SD* = 4.02). Random assignment resulted in 21 women and 4 men in the AG and in 18 women and 7 men in the CG.

The AG was provided with four weeks of art therapy interventions at an interval of three times per week (for a maximum of 12 sessions), each of which consisted of 10-15 min. for introduction, 35-40 min. for individual art-making with the support of an art therapist, and 15-20 min. for group discussion time after art-making, totaling 60-75 min. per session. The CG was not provided with any art therapy intervention for the same four-week period and instead participated in regular program activities, such as reading books, playing board games, and watching television.

**Instruments**

Three standardized tests were administered to participants both before and after the intervention group received the intervention: the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), which was used in the pilot study, along with two new tests: the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and the Rosenberg Self-Esteem Scale (RSES)

(Rosenberg, 1965). All three tests were translated into Korean for the Korean American research participants.

**Positive and Negative Affect Schedule (PANAS).** The Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) is a mood state questionnaire consisting of 20 adjectives that are rated by the participant on a 5-point scale ranging from 1 (very slightly or not at all) to 5 (extremely). The PANAS is simple and easy to administer, and the questions are worded so that they are relevant to the elderly. The positive affect subscale, manifested by feelings of activation, elation, enthusiasm, and enjoyment, consists of 10 items, such as *interested, excited, strong, enthusiastic, proud, alert, inspired, determined, attentive*, and *active*, with potential scores ranging from 10 to 50. The negative affect subscale, encompassing feelings of distress, hostility, nervousness, scorn, and gloominess, is comprised of 10 words, such as *afraid, distressed, upset, guilty, scared, jittery, hostile, irritable, ashamed*, and *nervous*, with scores ranging from 10 to 50. The PANAS has been shown to possess high internal consistency. Watson et al. (1988) reported internal consistency reliability estimates (Cronbach's $\alpha$) of .86 on the positive affect subscale and .87 on the negative affect subscale. In a study on the subjective well-being of Korean elderly, internal consistency reliability estimates (Cronbach's $\alpha$) of .84 on the positive affect subscale and .79 on the negative affect subscale were reported (Jeon, 2005).

**State-Trait Anxiety Inventory (STAI).** The State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) is a standardized pencil-and-paper questionnaire that enables researchers to measure both state and trait levels of anxiety. The current variation is the STAI Form Y, appropriate for those who have

achieved at least a sixth grade reading level, which contains a 40-item self-report measure. The instrument is divided into two sections, the state anxiety scale (STAI1) and the trait anxiety scale (STAI2), each having 20 questions. Approximately 10 minutes are required for adults to complete the STAI, which helps to distinguish feelings of anxiety from those of depression. Internal consistency reliability estimates (Cronbach's $\alpha$) of .54 for STAI1 and .86 for STAI2 were reported (Spielberger, Gorsuch, & Lushene, 1970). Kim and Shin (1978) reported internal consistency reliability estimates (Cronbach's $\alpha$) of .87 for STAI1 and .86 for STAI2 with a Korean sample. In a study on preoperative anxiety in Korean elderly women, internal consistency reliability estimates (Cronbach's $\alpha$) of .89 for STAI1 and .86 for STAI2 were reported (Kim, 2008).

The essential qualities evaluated by the STAI1 scale are feelings of apprehension, tension, nervousness, and worry. A cognitive appraisal of threat is a prerequisite for the experience of these emotions (Lazarus, 1991). Scores on the STAI1 scale increase in response to physical danger and psychological stress, and decrease as a result of relaxation training.

Trait anxiety, as opposed to state anxiety, reflects individual differences in the existence of a stable tendency to respond with state anxiety in anticipation of threatening situations. It has been related to health (Forsberg & Bjorvell, 1993). Anxiety can be the cause of illness, or it can be an effect of illness (Forsberg & Bjorvell, 1993). On the STAI2 scale, consistent with the trait anxiety construct, psychoneurotic and depressed patients generally have high scores. The range of scores is 20-80, a higher score indicating greater anxiety (Spielberger et al., 1970). Some of the questions relate to the absence of anxiety and are reverse-scored. Results of the STAI can be used in the

formulation of a clinical diagnosis; to help differentiate anxiety from depression; for psychological and health research; and for the assessment of clinical anxiety in clients in medical, surgical, and psychiatric settings (Mind Garden, 2008). The STAI can be administered to both groups and individuals, depending on the needs of those being evaluated (Mind Garden, 2008). The STAI has been adapted into 48 languages, and it can be used to effectively measure a particular population in a study regardless of their racial, spiritual, or gender background (Mind Garden, 2008).

**Rosenberg Self-Esteem Scale (RSES).** Self-esteem is a person's overall evaluation or appraisal of his or her own worth, and the term encompasses self-worth, self-regard, self-respect, self-love, self-promotion, and self-integrity (Blascovich & Tomaka, 1991). Rosenberg (1965) defines it as "a favorable or unfavorable attitude toward the self" (p. 15).

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is the most widely used self-esteem measure; it consists of 10 items, and it has shown high reliability and validity (Gray-Little, Williams, & Hancock, 1997; Robins, Hendin, & Trzesniewski, 2001). Fleming and Courtney (1984) reported a Cronbach's $\alpha$ of .88 and test-retest reliability coefficient of .82 with a one-week interval. While designed as a Guttman scale, it is now commonly scored via a 4-point Likert scale, ranging from *strongly agree* to *strongly disagree*. To score the items, a value is assigned to each of the 10 items as follows: 1) For items 1, 2, 4, 6, and 7: Strongly Agree=3, Agree=2, Disagree=1, and Strongly Disagree=0; 2) For items 3, 5, 8, 9, and 10 (which are reversed in valence): Strongly Agree=0, Agree=1, Disagree=2, and Strongly Disagree=3. The scale ranges from 0-30, with 30 indicating the highest score possible. Scores between 15 and 25 are within

normal range; scores below 15 suggest low self-esteem.

**Art Therapy Intervention**

Art therapy interventions were designed to promote healthy aging by reducing negative emotions (including anxiety), increasing positive attitude, and pursuing psychological well-being through the promotion of high self-esteem. The art therapy intervention Group (AG) was provided with art therapy sessions three times per week for four weeks (for a maximum total of 12 sessions). The art-making sessions were conducted in a group format, open studio style, with an art therapist present, and the participants were encouraged to work on their own individual art-making according to their particular preference. The participants were provided with acrylic paints, white modeling clay, and some other basic art supplies, such as colored pencils, crayons, markers, and pencils. Each session consisted of approximately 60-75 min, broken down into 10-15 min of introduction, 35-40 min of art-making, and 15-20 min of discussion and sharing time. Creative freedom was encouraged so that the participants might explore and express their emotions and ideas from the very beginning of the art therapy intervention, including deciding which art materials to utilize, finding a subject and/or a theme to work on, selecting reference sources, including personal photos and famous artists' work, and developing their own artistic style as much as possible. There was no limit or required number of artworks to create. The average number of participants in each art therapy session was 12, and each participant could choose to continue working on one piece of art throughout all of the sessions, or to complete one artwork per session. Each individual, however, was strongly encouraged to actively participate in every discussion after the art-making time and focus on expressing his or her feelings that were

explored through both the art-making and the interaction with the art therapist. Upon completing their artwork, it was suggested (but not required) that they display their artwork somewhere safe and visible to the public in their facility, in order to promote a feeling of ownership and pride.

The art therapist who was hired for this study was a recent art therapy program graduate and could communicate in both English and Korean. She was closely supervised to ensure that she provided the sessions in a safe therapeutic environment, both physically and psychologically. Throughout the art therapy interventions, all the participants were given chances to explore their inner state of mind, both in the creative art-making process and in sharing their feelings and concerns during the group discussion. Although it was a challenging task for the older adult participants to create something with unfamiliar art materials, most of them welcomed and even expressed excitement about the idea that they could contribute to a research project and that their voices could be heard and acknowledged in the mental health field. The data on the experience of the AG participants were collected from the therapist's report and from the direct observations of the researcher.

The creative art-making offered the older individuals, both experienced and inexperienced in art, a range of materials and a space where they could express their subjective visions. With an art therapist's guidance, they manipulated the clay, paint, paper, and brush, thereby shaping, designing, expressing, and communicating their personal statements. The art therapist suggested that each participant write a memo or short note on the backside of the painting regarding their feelings of creating art and reflecting themselves in visual images. At the beginning of the art therapy, it seemed

hard for them even to name their own artworks, but towards the end of the art therapy interventions, the participants became more expressive not only in visual images but also in writing about both their artwork and their related feelings.

**Data Analysis Procedures**

The collected data were analyzed using SPSS 15.0 software. The results of the statistical analyses are presented in three sections. The first analysis used descriptive statistics. The second section of the data analysis compared the pre-test scores of the intervention and control groups to determine the equivalency between the groups prior to beginning the intervention. The final part of the data analysis used inferential statistics to address the research question and hypotheses developed for this study. An alpha level of .05 was used as the decision criterion for determining the statistical significance of the findings.

Scores on all three pre-test measures—PANAS, STAI, and RSES—were compared between the art therapy intervention group (AG) and the control group (CG) to determine if they were equivalent prior to the art therapy intervention. An independent groups t-test was performed, as well as non-parametric analyses such as the Mann-Whitney U test and the Wilcoxon signed-rank test. These latter test results were identical to those of the independent groups t-test.

In order to determine whether the art therapy intervention was effective, change scores for the total scores of the PANAS, STAI, and RSES measures were calculated by subtracting the total post-test scores from the total pre-test scores. An independent groups t-test was performed to compare how the change scores on the three measures differed between AG and CG. Third, in order to further examine if the intervention was

effective where the changes most differed between AG and CG, change scores for all of the individual items of the PANAS, STAI, and RSES measures were calculated by subtracting the post-test scores from the pre-test scores. Then, an independent groups t-test was performed with the individual items of the three scales. A Bonferroni correction was used to address alpha inflation, dividing an alpha level of .05 by the number of items in each scale.

# Chapter 4

## Results

The chapter is divided into three sections. The first section provides a description of the sample used in the study. The second section compares the pre-test scores of the two groups to determine pre-test equivalencies. The final section presents the results of the inferential statistical analyses that were used to address the research question and test the associated hypotheses.

All participants were administered the PANAS, STAI, and RSES both before and after four weeks of art therapy intervention. Pre- and post-intervention scores on these three scales were evaluated, using SPSS 15.0 software, and tested at an alpha level of .05. Descriptive statistics provided a profile of the sample.

### Characteristics of the Sample and Descriptives

As shown in Table 1, participants' ages in the Art Therapy Intervention Group (AG) ranged from 69-87, with a mean age of 77.64 (*SD* = 5.51). Participants' ages in the Control Group (CG) ranged from 72-86, with a mean age of 78.76 (*SD* = 4.02). Random assignment resulted in 21 women and 4 men in the AG, and 18 women and 7 men in the CG (see Table 2).

Table 1

*Profile of the Sample: Age Group*

| | Mean | SD | N | Median | Range | |
|---|---|---|---|---|---|---|
| | | | | | Minimum | Maximum |
| AG | 77.64 | 5.51 | 25 | 77 | 69 | 87 |
| CG | 78.76 | 4.02 | 25 | 79 | 72 | 86 |

Table 2

*Profile of the Sample: Gender*

| | Gender | | N |
|---|---|---|---|
| | Male | Female | |
| | n (%) | n (%) | |
| AG | 4 (16%) | 21 (84%) | 25 (100%) |
| CG | 7 (28%) | 18 (72%) | 25 (100%) |

The AG was provided with four weeks of art therapy interventions at an interval of three times per week (for a maximum of 12 sessions), each session of which consisted of 10-15 min for introduction, 35-40 min for individual art-making with the support of an art therapist, and 15-20 min for group discussion time after art-making, totaling 60-75 min per session. The CG was not provided with any art therapy intervention for the same four weeks and instead participated in regular program activities such as reading books, playing board games, and watching television. Table 3 presents the number of art therapy intervention sessions attended by individuals in the AG. There were no significant differences between those who did not complete all sessions and those who did on all three measures at post-test.

Table 3

*Frequency of Art Therapy Intervention Attendance*

| Number of Sessions Attended | Number of Participants | % |
|---|---|---|
| 8 | 2 | 8% |
| 9 | 1 | 4% |
| 10 | 4 | 16% |
| 11 | 6 | 24% |
| 12 | 12 | 48% |
| Total | 25 | 100% |

Descriptive statistics of the AG and CG for all dependent variables and internal consistency reliability estimates (Cronbach's α) obtained at pre-test and post-test are presented in Table 4.

Table 4

*Descriptive Statistics of Art Therapy Intervention Group (AG) and Control Group (CG) and Reliability Coefficients (Chronbach*'s α*) at Pre- and Post-Test*

| | Pre-test (Time 1) | | | | | Post-test (Time 2) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AG (N=25) | | CG (N=25) | | | AG (N=25) | | CG (N=25) | | |
| | Mean | SD | Mean | SD | α | Mean | SD | Mean | SD | α |
| PANAS | 63.40 | 6.61 | 62.68 | 6.71 | pos=.85<br>neg=.87 | 83.28 | 5.02 | 57.04 | 6.67 | pos=.94<br>neg=.94 |
| STAI1 | 40.46[a] | 9.08 | 42.60 | 8.76 | .89 | 27.16 | 6.07 | 45.68 | 7.86 | .95 |
| STAI2 | 42.24 | 8.76 | 43.16 | 8.19 | .86 | 34.40 | 5.97 | 46.12 | 7.55 | .91 |
| RSES | 16.52 | 3.45 | 16.44 | 2.65 | .66 | 20.76 | 4.09 | 15.96 | 2.51 | .83 |

[a] n=24

**Analyses**

As shown in Table 5, the pre-test scores on the PANAS, STAI, and RSES measures were assessed in both the art therapy intervention group (AG) and the control group (CG) to determine if they were equivalent prior to the art therapy intervention. Results from an independent groups t-test showed that there was no statistically significant difference between the two groups before intervention. The pre-test scores for all four dependent variables did not differ between the art therapy intervention group and the control group. This finding indicates that the research participants in the art therapy group and the control group were equivalent in their levels of affect, anxiety, and self-esteem before the art therapy intervention was implemented.

Table 5

*Dependent Variable Equivalency between Art Therapy Intervention Group (AG) and Control Group (CG) at Pre-Test (Time 1)*

| | AG (N=25) | | CG (N=25) | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | df | *t*-value | *p*-value |
| PANAS | 63.40 | 6.61 | 62.68 | 6.71 | 48 | 0.38 | 0.70 |
| STAI1 | 40.46[a] | 9.08 | 42.60 | 8.76 | 47 | -0.84 | 0.41 |
| STAI2 | 42.24 | 8.76 | 43.16 | 8.19 | 48 | -0.38 | 0.70 |
| RSES | 16.52 | 3.45 | 16.44 | 2.65 | 48 | 0.92 | 0.93 |

[a.] n=24

In order to determine whether the art therapy intervention was effective, change scores for the total scores of the PANAS, STAI1, STAI2, and RSES measures were computed by subtracting the total post-test scores from the total pre-test scores. An

independent group t-test was performed to compare how the change scores of the dependent variables differed between the art therapy intervention group and the control group (Table 6). Participants in the art therapy intervention group showed a greater change on the PANAS in a positive direction after the art therapy intervention compared to the control group, $t$ (48)=-16.38, $p<.01$. Statistically significant differences were found in the change scores for STAI1 and STAI2 between the art therapy intervention group and the control group. Participants in the art therapy group reported a greater decrease in both state and trait anxiety after the art therapy intervention, compared to those in the control group (STAI1: $t$ (47)=10.81, $p$=0.00; STAI2: $t$ (48)=7.51, $p$<0.01).

A statistically significant difference was found in the change scores for RSES between the art therapy intervention group and the control group $t$ (48)=-7.75, $p$<0.01). Participants in the art therapy intervention group showed a greater increase in self-esteem after the intervention, compared to those in the control group.

Large effect sizes indicated an 84.6% positive change in affect ($r$ = .92) and an 70.6% positive change in state of anxiety ($r$ = .84) for participants in the art therapy intervention group over the control group. Moderate effect sizes of the art therapy intervention indicated positive changes in self-esteem and trait anxiety ($r$ = .75 and $r$ = .74, respectively).

Table 6

*Group Difference in Change Scores Between Art Therapy Intervention Group (AG) and Control Group (CG)*

| Change Score | AG (N=25) | | CG (N=25) | | df | *t*-value | *p*-value | Es (*r*) |
|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | | | | |
| PANAS | 19.88 | 5.48 | -5.64 | 5.54 | 48 | 16.38 | 0.001 | 0.92 |
| STAI1 | -13.17[a] | 5.47 | 3.08 | 5.05 | 47 | -10.81 | 0.001 | 0.84 |
| STAI2 | -7.84 | 4.33 | 2.96 | 5.74 | 48 | -7.51 | 0.001 | 0.74 |
| RSES | 4.24 | 2.42 | -0.48 | 1.85 | 48 | 7.75 | 0.001 | 0.75 |

[a.] n=24

Change scores were computed by subtracting post-test scores from pre-test scores. Therefore, negative mean scores indicate that the post-test scores were higher than the pre-test scores. The mean score changes of the art therapy intervention group and the control group were significantly different on all three measurements.

Although the mean difference was statistically significant in change scores, the individual item-level analyses on all four measures were performed to search the meaning of the change (Table 7 through Table 9). It came out that mostly, negative emotions such as upset, scared, hostile, confused, tense, and feeling overwhelmed, had no difference between the art therapy intervention group and the control group.

Table 7

*Group Difference on Change Scores of Individual Items: PANAS*

| PANAS | Change Scores | | | | t-value | p-value |
|---|---|---|---|---|---|---|
| | AG (N=25) | | CG (N=25) | | | |
| | M | SD | M | SD | | |
| 1. Interested | -1.72 | 0.84 | 0.40 | 0.91 | -8.53 | .000 |
| 2. Distressed | -0.68 | 0.85 | 0.16 | 0.69 | -3.83 | .000 |
| 3. Excited | -1.52 | 0.92 | 0.44 | 0.96 | -7.37 | .000 |
| 4. Upset | -0.52 | 0.82 | 0.12 | 0.78 | -2.82 | .007[ns] |
| 5. Strong | -1.04 | 0.61 | 0.28 | 0.61 | -7.62 | .000 |
| 6. Guilty | -0.48 | 0.72 | 0.32 | 0.80 | -3.73 | .001 |
| 7. Scared | -0.28 | 0.73 | 0.12 | 0.88 | -1.74 | .088[ns] |
| 8. Hostile | -0.40 | 0.71 | -0.16 | 0.69 | -1.22 | .230[ns] |
| 9. Enthusiastic | -1.20 | 1.04 | 0.64 | 0.76 | -7.15 | .000 |
| 10. Proud | -1.44 | 0.96 | 0.48 | 0.87 | -7.40 | .000 |
| 11. Irritable | -0.60 | 0.91 | 0.40 | 0.82 | -4.08 | .000 |
| 12. Alert | -1.28 | 0.89 | 0.32 | 0.63 | -7.34 | .000 |
| 13. Ashamed | -0.24 | 0.83 | -0.12 | 0.73 | -0.54 | .589[ns] |
| 14. Inspired | -2.44 | 0.77 | 0.48 | 0.71 | -13.92 | .000 |
| 15. Nervous | -0.64 | 1.04 | 0.20 | 0.76 | -3.26 | .002 |
| 16. Determined | -0.96 | 0.89 | 0.32 | 0.85 | -5.20 | .000 |
| 17. Attentive | -1.92 | 0.91 | 0.32 | 0.90 | -8.76 | .000 |
| 18. Jittery | -0.60 | 0.87 | 0.44 | 0.71 | -4.64 | .000 |
| 19. Active | -1.32 | 0.90 | 0.36 | 0.81 | -6.94 | .000 |
| 20. Afraid | -0.60 | 0.87 | 0.12 | 0.60 | -3.42 | .001 |

[ns] not significant (p>0.0025)

Table 8

*Group Difference on Change Scores of Individual Items: STAI*

| STAI1 items | Change Scores | | | | t-value | p-value |
|---|---|---|---|---|---|---|
| | AG (N=25)[a] | | CG (N=25) | | | |
| | M | SD | M | SD | | |
| 1. I feel calm. | 0.48 | 0.65 | 0.12 | 0.44 | 2.29 | .027[ns] |
| 3. I am tense. | 0.40 | 0.65 | -0.28 | 0.94 | 2.99 | .004[ns] |
| 4. I feel strained. | 0.40 | 0.58 | -0.20 | 0.82 | 3.00 | .004[ns] |
| 6. I feel upset. | 0.24 | 0.52 | -0.16 | 0.75 | 2.20 | .033[ns] |
| 9. I feel frightened. | 0.24 | 0.44 | -0.28 | 0.74 | 3.04 | .004[ns] |
| 13. I am jittery. | 0.12 | 0.44 | -0.32 | 0.69 | 2.69 | .010[ns] |
| 14. I feel indecisive. | 0.44 | 0.71 | 0.16 | 0.47 | 1.64 | .108[ns] |
| 18. I feel confused. | 0.29 | 0.62 | -0.12 | 0.53 | 2.50 | .016[ns] |
| STAI2 items | | | | | | |
| 21. I feel pleasant. | 0.16 | 0.47 | 0.04 | 0.35 | 1.02 | .313[ns] |
| 24. I wish to be happy as others are. | -0.04 | 0.61 | -0.40 | 0.71 | 1.93 | .060[ns] |
| 25. I feel like a failure. | 0.20 | 0.41 | -0.12 | 0.53 | 2.40 | .020[ns] |
| 27. I am “calm, cool, and collected”. | 0.52 | 0.59 | 0.20 | 0.71 | 1.74 | .088[ns] |
| 28. I feel too overwhelmed to overcome. | 0.28 | 0.46 | -0.12 | 0.67 | 2.47 | .017[ns] |
| 38. I can't forget disappointments in mind. | 0.32 | 0.56 | 0.00 | 0.65 | 1.88 | .067[ns] |
| 39. I am a steady person. | 0.52 | 0.51 | 0.12 | 0.44 | 2.97 | .005[ns] |

[a] n=24 on items #18.
[ns] not significant (p>0.0025)
Note. Due to Mindgarden copyright restriction of publishing full items of STAI, only non-significant individual items are presented here.

Table 9

*Group Difference on Change Scores of Individual Items: RSES*

| RSES items | Change Scores | | | | t-value | p-value |
|---|---|---|---|---|---|---|
| | AG (N=25) | | CG (N=25) | | | |
| | M | SD | M | SD | | |
| 1. On the whole, I am satisfied with myself. | -0.44 | 0.58 | -0.04 | 0.61 | -2.37 | .022[ns] |
| 2. At times, I think I am no good at all. | -0.44 | 0.65 | 0.12 | 0.53 | -3.35 | .002 |
| 3. I feel that I have good qualities. | -0.84 | 0.47 | 0.00 | 0.00 | -8.89 | .000 |
| 4. I am able to do things like others. | -0.64 | 0.57 | 0.00 | 0.29 | -5.02 | .000 |
| 5. I feel I do not have much to be proud of. | -0.36 | 0.57 | 0.08 | 0.28 | -3.48 | .001 |
| 6. I certainly feel useless at times. | -0.60 | 0.58 | 0.12 | 0.44 | -4.96 | .000 |
| 7. I feel worthy like others. | -0.60 | 0.50 | 0.00 | 0.29 | -5.20 | .000 |
| 8. I wish to respect myself more. | 0.68 | 0.63 | 0.16 | 0.55 | 3.11 | .003 |
| 9. Wholly, I tend to feel I am a failure. | -0.40 | 0.50 | 0.08 | 0.40 | -3.75 | .000 |
| 10. I take a positive attitude toward myself. | -0.60 | 0.65 | -0.04 | 0.35 | -3.81 | .000 |

[ns] not significant (p>0.005)

# Chapter 5

# Discussion

This chapter has three sections: (1) a discussion of the research question and hypotheses; (2) the limitations of the study, along with recommendations for future research; and (3) the implications of the study results for art therapy practice to promote healthy aging in the older population.

The purpose of this study was to examine the effects of art therapy on the healthy aging of Korean American older adults. Anxiety is common in the older adult population, but it is not part of the normal aging process (Cohen, 2005). Anxiety can negatively affect physical health, causing such ailments as headache, dyspepsia, peptic ulcers, hypertension, etc., and it accompanies stressful encounters (Schwarzer, 1990, 1996). Stress and anxiety can elevate state anxiety and blood pressure to dangerous levels. Thus, it is important to address negative emotions, including anxiety and its accompanying stress, in order to promote healthy aging in older adults.

## Research Question and Hypotheses

The research question addressed in this study concerns whether an art therapy intervention might contribute to healthy aging in Korean American older adults. In answering this research question, the following three hypotheses were explored and examined.

1. There will be a significant change in positive and negative affect for the art therapy intervention participants, compared to a control group of Korean American older adults.
2. The art therapy intervention will decrease state-trait anxiety in Korean American older adults who participate in the treatment, compared to a control group.
3. The art therapy intervention participants will improve self-esteem following completion of the art therapy program, compared to a control group of Korean American older adults.

This study showed positive results that support the hypothesis that the art therapy intervention with Korean American older adults promoted healthy aging by reducing negative emotions, improving self-esteem, and decreasing anxiety. Participants in the art therapy intervention group showed a greater positive change on the PANAS and RSES measures as compared to the control group. On the STAI1 and STAI2 measures, participants in the art therapy intervention group showed less change. The higher scores on the PANAS and RSES by the intervention participants reveal that the intervention promoted psychological well-being by decreasing negative emotions in the Korean American older individuals' minds. The art therapy intervention helped Korean American older individuals to reduce both state and trait anxiety. Trait anxiety has been found to be related to health; for example, individuals who self-rate their health as positive score lower in anxiety (Forsberg & Bjorvell, 1993). By participating in the art therapy intervention, the anxiety level of Korean American older individuals was

reduced; thus, it can be concluded that the intervention contributed to better physical health and emotional well-being.

The comments from the intervention group participants after the post-test can be summarized in three positive categories. First, it was a joy for them to try something new and unfamiliar and to create something with art materials. Although participants were challenged at the beginning, they transformed the challenge into a feeling of accomplishment at the end. Second, it was a meaningful process, not only having a chance to explore and express their inner self with visual images, but also sharing and listening to others' expressions with the art therapist as a witness. It was a good feeling when they were heard by others and understood without judgment or evaluation. Third, it led to a new discovery of possibilities in activities, hobbies, and learning opportunities by planning and fashioning their ideas, thoughts, and feelings into art. In addition to the quantitative research results, the voluntary comments of the art therapy intervention group participants particularly support the contribution that art therapy makes to healthy aging in the Korean American older population.

One specific environmental condition during the research study must be mentioned. While the research study was running, the pandemic influenza A (H1N1) virus, known as Swine Flu, alarmed the public. The outbreak was reported to have caused a high number of deaths, but at that point it lacked a proper and effective treatment plan in the US and many other countries. The two research sites scheduled in-service sessions for their elderly clients to deliver proper education and information on H1N1. The purpose of the sessions was to deliver correct information to the older audience by describing symptoms, such as coughing and fever, possible treatments, and

preventive actions. Unfortunately, the older individuals became more concerned after participating in the sessions due to the fact that the virus spread fast, there was as of yet no definite medical intervention, and older individuals could be victimized easily.

This concerned me as a researcher because it could affect the emotions and anxiety level of the research participants in both the intervention and control groups, as measured with the PANAS and STAI. Surprisingly, the post-test results were significantly positive concerning the effect of the art therapy intervention compared to those of the control group. The individual item-analyses of the three measurements showed that the differences in change scores between the art therapy intervention group and the control group on negative emotions, such as scared, upset, tense, and frightened, were not statistically significant. This result can be interpreted to mean that both the art therapy intervention group and the control group were influenced by the negative impact of the environmental condition of the H1N1 virus. The most significant difference between the intervention and control groups concerned whether or not the research participants were given chances to access and process their feelings related to the information on H1N1. The art therapist reported that, after the in-service session, the intervention participants spent most of their group discussion time on H1N1-related issues. For example, a participant questioned whether or not it was a safe decision to come to the ADHCP, where many people were grouped closely together, thus creating a high possibility of being exposed to the virus. The group participants shared their concerns, requested updated information from the therapist, and suggested possible ways to react in case of emergency. However, it was not observed or reported that the control group had such chances to access, express, and process their feelings and questions

regarding the H1N1 virus within a group and/or in the presence of a therapist. It can be postulated that it is an important aspect of emotional well-being to express, share, and be supported in a social context.

**Limitations and Suggestions for Future Research**

This study supported the effectiveness of art therapy in a group setting with an art therapist for the Korean American older population, as it was shown to promote positive emotion and high self-esteem, and to reduce negative feelings and anxiety. Even though the results showed the effectiveness of art therapy on healthy aging in Korean American older adults, they are not sufficient to conclude that the intervention is effective with other ethnic elderly populations. Because this study was the first to examine how art therapy contributes to healthy aging in Korean American older adults by using psychometric assessments (PANAS, STAI, and RSES), no previous research was available with which to develop specific hypotheses. It is my hope that future research will develop specific hypotheses with a larger number of participants of different ethnic backgrounds based on the findings of this study. Other expressive arts therapies may also provide effective intervention for healthy aging. An idea for future research would be to compare art therapy with other expressive arts therapies that possess common elements, such as creative expression, group sharing and processing, and self-reflection. In addition to efforts to improve the limitations of this study, efforts to achieve a better understanding of the culture of the participants could be made.

Towards the end of the research study, it was recognized that attendance at the ADHCP control group was lower than at the beginning, and it required additional days to collect the post-tests. The total number of days of each individual's attendance was not

recorded for the control group because they all remained in the program during the four-week period of no treatment, despite some absences.

At the end of the study, most of the art therapy intervention group participants agreed to display their chosen artwork in a public place, such as a dining area or hallway. Many people, such as staff, other members, and visitors, displayed high appreciation for the artists and their artworks by offering positive comments and feedback. This seemed to encourage the art therapy participants to feel proud and motivated them to score higher on their RSES post-test. In future studies, it would be informative to collect both quantitative and qualitative data regarding participants' experiences in art therapy. The effectiveness of the art therapy intervention can be further examined in future studies using other variables, such as life events, health status, or medication change, after the intervention for both the experimental and control groups. After this four-week study was completed, the art therapy group sessions were offered to the control group participants who had become interested in the art therapy intervention.

As seen in this study, art therapy reduced negative emotions and led to positive changes, both of which in turn lead to healthy aging. In conclusion, this research supports the value and effectiveness of art therapy with Korean American older adults to promote healthy aging by increasing positive emotions, reducing negative emotions, and improving self-esteem via creative art-making and discussion with group members in the presence of an art therapist.

**Implications for Art Therapy Practice**

The findings of this study strongly suggest that art therapy contributes to healthy aging in Korean American older adults to promote well-being and a better quality of life.

An effort was made to understand the physiology of the brain as it relates to art therapy for promoting healthy aging in Korean American older individuals.

Based on information provided by the APA (2005), 50 to 70% of primary doctor visits are related to psychological factors such as anxiety and stress. The art therapy intervention significantly reduced the level of anxiety in Korean American older adults. Thus, the goal of utilizing the art therapy intervention with the older population can be established in support of healthy aging so as to reduce medical visits by reducing anxiety and stress and promoting emotional well-being.

It is important for older adults to maintain a positive perspective and mindset in order to promote a sense of well-being in their aging process (Hill, 2005; Valliant, 2002). Art therapy sessions should be designed to promote a sense of well-being by encouraging participants to experience a sense of control and mastery in using art materials, creating their own image, making decisions, and feeling accomplished throughout the creative process of art-making.

A positive perspective is important for healthy aging. Older individuals easily adapt to changes that result from their aging process by using their own continuity strategies developed from life experiences (Atchley, 1989). In art therapy, each individual's attitude and life value can be rediscovered and integrated in the form of art, and one's reflection upon it, in a group setting, thereby promoting self-esteem. Art therapy should be designed for older adults to encourage their psychological development by creating balance and peace with their feelings of integrity, such as self-worth and efficacy, and their feelings of despair due to age-related physical and cognitive declines.

The psychocybernetic approach to art therapy was designed to promote the cultivation of positive feelings along with a sense of control and mastery. The key concept of the psychocybernetic approach is to receive feedback on mental imagery by engaging both the right and left hemispheres of the brain in art therapy. The sensory systems exchange signals between the two hemispheres while creating mental imagery in the form of art, and thoughts are integrated with metaphor (Nucho, 2003). In the brain, new synaptic connections are created and stimulated while processing information analytically (left brain function) with imagination (right brain function). This activity in the brain promotes creativity and problem solving ability, both of which enable physical brain change and emotional balance for better mental health and well-being. Therefore, the positive feelings necessary for the promotion of healthy aging can be acquired by applying the psychocybernetic approach in art therapy.

Art therapy can be expected to reduce brain aging by stimulating and rewiring synaptic connections between neurons; thickening brain cell bodies, axons, and dendrites for better compensation of functioning; and increasing blood flow to the forebrain. The mental activities that accompany artistic creation stimulate both the right and left hemispheres and increase cerebral blood flow in the brain (Hass-Cohen, 2008; Ratey, 2001). As a result, cognitive brain function can be improved, even in older individuals.

As the PD patient presented changes in artistic productivity upon taking a dopamine-enhancing drug (Kulisevsky, Pagnabarraga, & Martinez-Corral, 2009), the role of dopamine, a neurotransmitter in sensory effects, seems important to the art therapy intervention. The understanding that there is a strong relation between changes in creativity and artistic style and dopaminergic imbalance in the brain suggests that there is

a possible involvement of neurotransmitters in art therapy, an idea which has not yet been addressed. Since dopamine is related to the obtained reward from the appreciation of beauty and increased sensitivity to sensory stimulus (Aharon et al., 2001), art-making in the art therapy intervention promotes continuous dopaminergic stimulation in brain of the art-maker, who can perceive more emotional experiences during creation.

The study results show the effectiveness of art therapy in promoting healthy aging in Korean American older adults. Psychometric assessments (PANAS, STAI, and RSES) were implemented and analyzed to measure the independent variables—affect, anxiety, and self-esteem—both before and after the art therapy intervention, and these results were compared to those of a control group. The art therapy intervention contributed to the promotion of healthy aging—not only emotionally, but also physiologically in the brain. One of the largest trial researches has demonstrated that cognitive interventions helped normal older adults to perform better on multiple measures of the specific cognitive ability when they were trained (Ball et al., 2002), and other studies (Friedland et al., 2001; Glass, Mendes de Leon, Marottoli, & Berkman, 1999; Wilson et al., 2002) have determined that the performance of stimulating mental activities, particularly novel activities, can improve cognitive functioning. Art therapy sessions need to be designed for and applied to the older population, and they should target the sharpening of cognitive skills to prevent brain aging, the stimulation of senses to promote creativity, the cultivation of positive attitudes to improve self-esteem, and the elimination of negative emotions to promote emotional well-being. These factors encompass the promotion of better health for older individuals.

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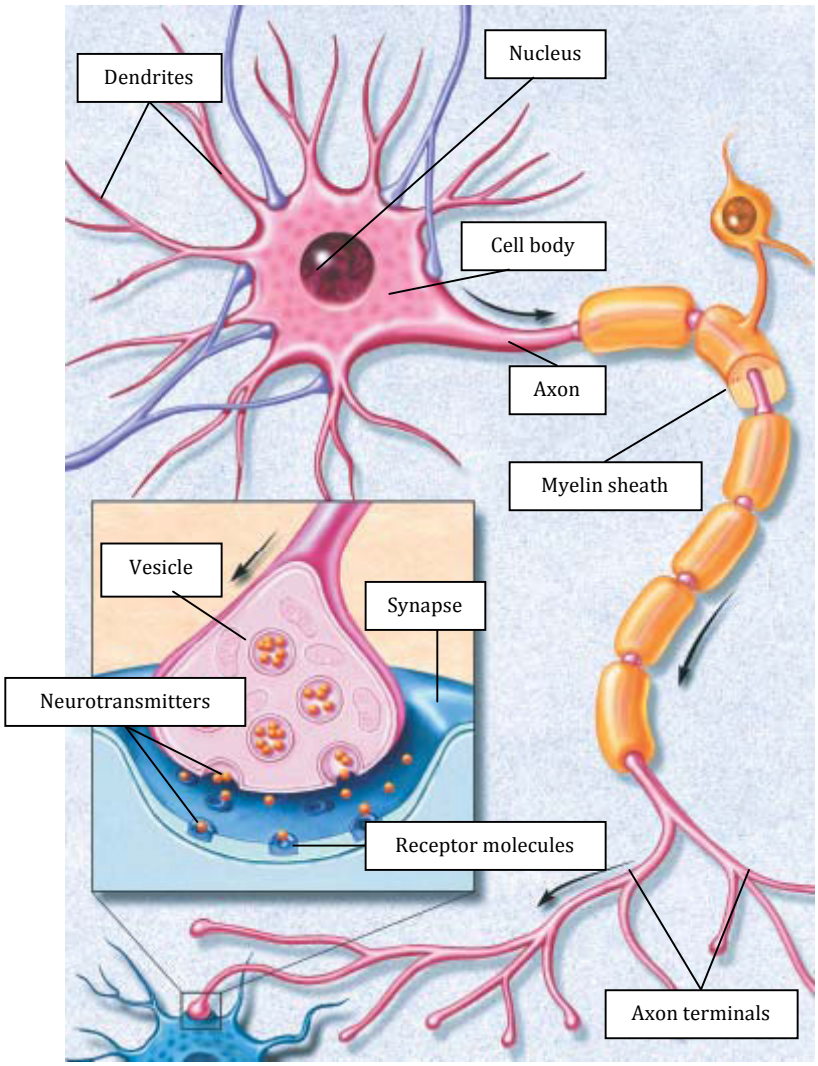


Figure 1. A simulated picture of neuron. Neuron transmits electrical signals along its axon. When signals reach the end of the axon, they trigger the release of neurotransmitters that are stored in pouches called vesicles. Neurotransmitters bind to receptor molecules that are present on the surfaces of adjacent neurons. The point of virtual contract is known as the synapse.

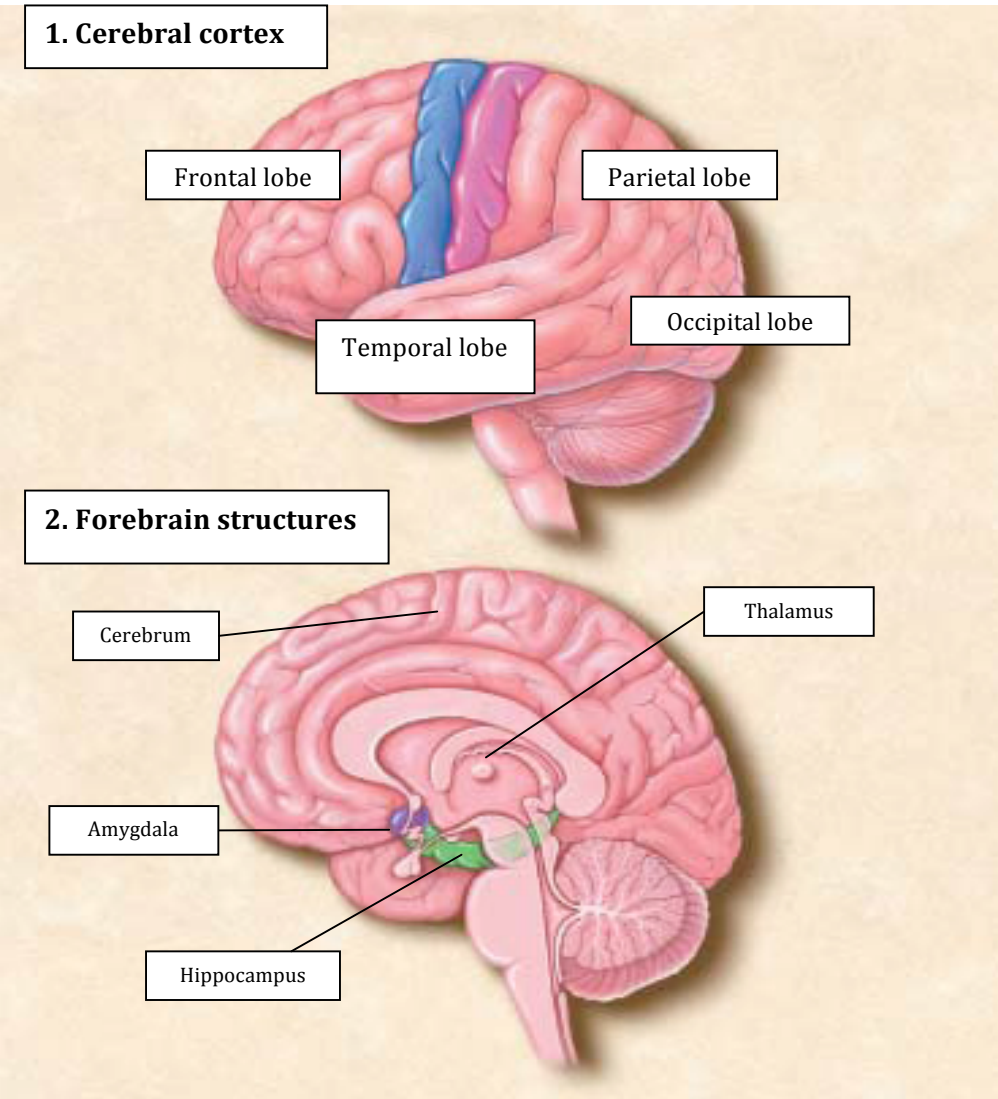


Figure 2. Brain Structure. The cerebral cortex functions for vision, hearing and speech, and these are distributed in selected regions. The forebrain is credited with the highest intellectual functions – thinking, planning and problem solving. The hippocampus is involved in memory.

# Appendix A: Human Subjects Consent Form

**HUMAN SUBJECTS CONSENT FORM**

Name: _____ Date: _____

Code: _____

1. **The purpose of this research** is to examine how art therapy contributes to healthy aging in Korean-American elderly.

2. **If I participate in this study the following will be done:** I will be asked to take Mini-Mental State Examination (MMSE), only if there is no score reported either from the primary doctor or from the admission intake, Positive and Negative Affect Schedule (PANAS), State Trait Anxiety Inventory (STAI), and Rosenberg Self-Esteem Scale (RSES). If needed, Korean translated versions will be given. All personal information and identifying information will not be attached to any report or publication in order to maintain confidentiality. I will be assigned either in art therapy intervention group or in control group.

   **a**. If assigned in art therapy group, I will be asked to do art making with choice of art materials, such as colored pencils, crayons, acrylic paintings, papers, and etc., according to my preferences. I am aware of the art therapist's intervention for the process of art making and of exploring of emotions every scheduled sessions, which will be twice per week for six consecutive weeks for the study period.
   **b.** If assigned in control group, I will not be offered any art activities for six weeks of the study period.

3. **The following are the risks and discomforts that may reasonably be expected:** It is unlikely that I feel uncomfortable while taking assessments and participating art making if I am in art therapy intervention group. However, if I feel uncomfortable during the course of this study, I may stop my activities at any time. This study involves no more risk than is experienced in as aspect of regular art therapy activities if I am in art therapy group.

4. **The following are benefits which reasonably may be expected:**

   **a.** To the art therapy participants: An opportunity to create artwork in a therapeutic environment, and to express and explore their inner feelings.
   **b.** Information may become apparent about how art therapy contributes and promotes healthy aging effectively.

   I understand that these benefits may or may not occur.

5. **The results of this study** may be published for the information of others. My artwork and answers to questions may be published but my name and my record will not be given out without my consent.

6. I will be told of any new information that may affect my willingness to continue in this research. I may leave this study at any time. Such a decision will not affect my future care.

7. I acknowledge that I have fully reviewed/ given verbal explanation and understood the contents of this consent form. I will be given a copy of this consent form.

   Participant signature _____ Date_____

   Witness _____ Date _____

**For the Investigator**

8. I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the purpose of this study.

Art Therapist/ Researcher_____

Contact Information _____Date _____

9. I certify that I am the principal investigator and am responsible for this study, for ensuring that the subject is fully informed in accordance with acceptable regulations and for advising the Human Rights Committee of any adverse reactions that develop from the study.

Principal Investigator _____ Date_____

# Appendix B: Authorization for Use of Art Work

**AUTHORIZATION FOR USE OF ART WORK**

Name: _____ Date: _____

Code: _____

I give consent for my artwork to be photographed or shown in original form for the purposes of educational presentations, conferences, research or teaching.

I give permission for photographs of my artwork to be published for similar purposes at any time in the future.

Participant signature _____

Researcher signature _____

-The End-

Appendix C: Positive and Negative Affect Schedule (English)

# PANAS

**Directions**

This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate to what extent you have felt this way during the past week.

Use the following scale to record your answers.

(1) = Very slightly or not at all (2) = A little (3) = Moderately (4) = Quite a bit (5) = Extremely

| | **Very slightly or not al all** | **A little** | **Moderately** | **Quite a bit** | **Extremely** |
|---|---|---|---|---|---|
| 1. Interested | | | | | |
| 2. Distressed | | | | | |
| 3. Excited | | | | | |
| 4. Upset | | | | | |
| 5. Strong | | | | | |
| 6. Guilty | | | | | |
| 7. Scared | | | | | |
| 8. Hostile | | | | | |
| 9. Enthusiastic | | | | | |
| 10. Proud | | | | | |
| 11. Irritable | | | | | |
| 12. Alert | | | | | |
| 13. Ashamed | | | | | |
| 14. Inspired | | | | | |
| 15. Nervous | | | | | |
| 16. Determined | | | | | |
| 17. Attentive | | | | | |
| 18. Jittery | | | | | |
| 19. Active | | | | | |
| 20. Afraid | | | | | |

Appendix D: Positive and Negative Affect Schedule (Korean)

## 정서 질문지 (Positive and Negative Affect Schedule: PANAS)

아래에는 여러 가지 감정과 기분을 묘사하는 단어들이 적혀 있습니다. 이 단어들을 읽고 당신이 최근 일주일 사이에 느껴왔던 심정에 해당하는 점수에 표시해 주시기바랍니다.

| 최근 일주일 동안, 나는 | 아주 조금 (전혀) | 조금 | 보통 | 꽤 | 아주 많이 |
|---|---|---|---|---|---|
| 1. 재미를 느꼈다. | 1 | 2 | 3 | 4 | 5 |
| 2. 괴로웠다. | 1 | 2 | 3 | 4 | 5 |
| 3. 좋아서 마음이 들떴다. | 1 | 2 | 3 | 4 | 5 |
| 4. 황당하고 화가났다. | 1 | 2 | 3 | 4 | 5 |
| 5. 자신감이 있었다. | 1 | 2 | 3 | 4 | 5 |
| 6. 죄책감이 들었다. | 1 | 2 | 3 | 4 | 5 |
| 7. 무섭고 겁이났다. | 1 | 2 | 3 | 4 | 5 |
| 8. 적대감이 들었다. | 1 | 2 | 3 | 4 | 5 |
| 9. 열정적이었다. | 1 | 2 | 3 | 4 | 5 |
| 10. 자랑스러웠다. | 1 | 2 | 3 | 4 | 5 |
| 11. 신경이 과민했다. | 1 | 2 | 3 | 4 | 5 |

| 최근 일주일 동안, 나는 | 아주 조금 (전혀) | 조금 | 보통 | 꽤 | 아주 많이 |
|---|---|---|---|---|---|
| 12. 긴장하고 있었다. | 1 | 2 | 3 | 4 | 5 |
| 13. 부끄러웠다. | 1 | 2 | 3 | 4 | 5 |
| 14. 새로운 것에 대한 영감을 받았다. | 1 | 2 | 3 | 4 | 5 |
| 15. 초조했다. | 1 | 2 | 3 | 4 | 5 |
| 16. 흔들리지 않는 확고한 마음을 느꼈다. | 1 | 2 | 3 | 4 | 5 |
| 17. 관심을 갖고 마음을 기울이는 일이 있었다. | 1 | 2 | 3 | 4 | 5 |
| 18. 신경질이 났다. | 1 | 2 | 3 | 4 | 5 |
| 19. 활기찼다. | 1 | 2 | 3 | 4 | 5 |
| 20. 두려웠다. | 1 | 2 | 3 | 4 | 5 |

수고하셨습니다.

Thank you!

Appendix E: State-Trait Anxiety Inventory (English)

# State-Trait Anxiety Inventory for Adults

**Developed by Charles D. Spielberger**
in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

Published by Mind Garden, Inc.
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Instrument: ***State-Trait Anxiety Inventory for Adults***

Authors: ***Charles D. Spielberger, in collaboration with R.L. Gorsuch, G.A. Jacobs, R. Lushene, and P.R. Vagg***

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for his/her thesis research.

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Sincerely,
Vicki Jaimez
Mind Garden, Inc. www.mindgarden.com

# State-Trait Anxiety Inventory for Adults

## SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

### Please provide the following information:

Name_____ Date _____ S _____
Age_____ Gender (*Circle*) **M** **F** T _____

**DIRECTIONS:**

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1: Not at all 2: Somewhat 3: Moderately so 4: Very much so

| | | | | |
|---|---|---|---|---|
| 3. I am tense | **1** | **2** | **3** | **4** |
| 6. I feel upset | **1** | **2** | **3** | **4** |
| 9. I feel frightened | **1** | **2** | **3** | **4** |
| 13. I am jittery | **1** | **2** | **3** | **4** |
| 18. I feel confused | **1** | **2** | **3** | **4** |

## SELF-EVALUATION QUESTIONNAIRE STAI Form Y-2

Name_____Date_____

**DIRECTIONS**

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel.

1: Not at all 2: Somewhat 3: Moderately so 4: Very much so

24. I wish I could be as happy as others seem to be .....**1 2 3 4**

25. I feel like a failure.....**1 2 3 4**

28. I feel that difficulties are piling up so that I cannot

overcome them .....**1 2 3 4**

38. I take disappointments so keenly that I can't put them

out of my mind .....**1 2 3 4**

39. I am a steady person.....**1 2 3 4**

Appendix F: State-Trait Anxiety Inventory (Korean)

# 상태-특성 불안 척도 (State-Trait Anxiety Inventory: STAI)

## STAI Form Y-1

이름_____ 날짜_____ S_____

나이_____ 성별: 남 / 여 T_____

아래는 사람들이 자신의 기분을 묘사하는데 쓰는 몇가지 문장들이 열거되어 있습니다. 각 문장을 읽고, 당신이 '지금 현재' 어떻게 느끼고 있는지를 가장 적절하게 묘사하는 번호에 동그라미 하십시오. 여기에는 정답이나 오답이 있는 것이 아닙니다. 한 문장에 너무 많은 시간을 할애하지 말고 현재의 자신의 기분을 가장 잘 나타낸다고 여겨지는 정도에 표시하시면 됩니다.

| 지금 현재 (나는) | 전혀 | 약간 | 보통 | 많이 |
|---|---|---|---|---|
| 3. 긴장되어 있다. | 1 | 2 | 3 | 4 |
| 6. 당황스럽고 화가난다. | 1 | 2 | 3 | 4 |
| 9. 겁이난다. | 1 | 2 | 3 | 4 |
| 13. 신경질이 난다. | 1 | 2 | 3 | 4 |
| 18. 혼란스럽다. | 1 | 2 | 3 | 4 |

# STAI Form Y-2

**이름**_____ **날짜**_____

아래는 사람들이 자신의 기분을 묘사하는데 쓰는 몇가지 문장들이 열거되어 있습니다. 각 문장을 읽고, 당신이 자신에 대해 일반적으로 느끼는 바를 가장 적절하게 묘사하는 번호에 동그라미 하십시오.

| 대체로 (나는) | 전혀 | 때때로 | 흔히 | 항상 |
|---|---|---|---|---|
| 24. 나도 남들처럼 행복했으면 한다. | 1 | 2 | 3 | 4 |
| 25. 나는 실패자 같은 느낌이 든다. | 1 | 2 | 3 | 4 |
| 28. 어려운 문제들이 쌓여서 내가 그것을 극복할 수 없을 것 같은 느낌이 든다. | 1 | 2 | 3 | 4 |
| 38. 나는 실망을 예민하게 받아들여 마음에서 지워버릴 수가 없다. | 1 | 2 | 3 | 4 |
| 39. 나는 착실한 사람이다. | 1 | 2 | 3 | 4 |

Appendix G: Rosenberg Self-Esteem Scale (English)

**Rosenberg Self-Esteem Scale** (Rosenberg, 1965)

The scale is a ten item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

| | | | | | |
|---|---|---|---|---|---|
| 1. | On the whole, I am satisfied with myself. | SA | A | D | SD |
| 2.* | At times, I think I am no good at all. | SA | A | D | SD |
| 3. | I feel that I have a number of good qualities. | SA | A | D | SD |
| 4. | I am able to do things as well as most other people. | SA | A | D | SD |
| 5.* | I feel I do not have much to be proud of. | SA | A | D | SD |
| 6.* | I certainly feel useless at times. | SA | A | D | SD |
| 7. | I feel that I'm a person of worth, at least on an equal plane with others. | SA | A | D | SD |
| 8.* | I wish I could have more respect for myself. | SA | A | D | SD |
| 9.* | All in all, I am inclined to feel that I am a failure. | SA | A | D | SD |
| 10. | I take a positive attitude toward myself. | SA | A | D | SD |

Scoring: SA=3, A=2, D=1, SD=0. Items with an asterisk are reverse scored, that is, SA=0, A=1, D=2, SD=3. Sum the scores for the 10 items. The higher the score, the higher the self esteem.

The scale may be used without explicit permission. The author's family, however, would like to be kept informed of its use:

The Morris Rosenberg Foundation c/o Department of Sociology University of Maryland
2112 Art/Soc Building
College Park, MD 20742-1315

**References**

References with further characteristics of the scale:

Crandal, R. (1973). The measurement of self-esteem and related constructs, Pp. 80-82 in J.P. Robinson & P.R. Shaver (Eds), **Measures of social psychological attitudes. Revised edition**. Ann Arbor: ISR.

Rosenberg, M. (1965). **Society and the adolescent self-image**. Princeton, NJ: Princeton University Press.

Wylie, R. C. (1974). **The self-concept. Revised edition**. Lincoln, Nebraska: University of Nebraska Press.

Appendix H: Rosenberg Self-Esteem Scale (Korean)

## 자아존중감 척도 (Rosenberg Self-Esteem Scale: RSES)

아래는 당신이 자신에 관해 갖는 일반적인 느낌에 대한 문장들입니다.
글을 읽고 동의하는 정도에 가장 가까운 점수에 표기해 주세요.

| 나에 관한 일반적인 느낌에 대해 | 아주 맞다 | 맞다 | 아니다 | 전혀 아니다 |
|---|---|---|---|---|
| 1. 대체로, 나는 나자신에 만족한다. | 3 | 2 | 1 | 0 |
| 2. 때때로, 나는 내가 아무 짝에도 쓸모가 없다고 느낀다. | 3 | 2 | 1 | 0 |
| 3. 나는 내가 여러가지 좋은 자질을 갖추었다고 느낀다. | 3 | 2 | 1 | 0 |
| 4. 나는 남들이 하는 만큼, 할 수 있는 능력이 있다. | 3 | 2 | 1 | 0 |
| 5. 내게는 자랑할 만한 것이 별로 없는 것 같다. | 3 | 2 | 1 | 0 |
| 6. 때때로, 내가 무익한 존재임을 강하게 느낀다. | 3 | 2 | 1 | 0 |
| 7. 나는, 최소한 남들이 자기자신을 괜찮다고 생각하는만큼은, 나 자신이 괜찮은 사람이라고 생각한다. | 3 | 2 | 1 | 0 |
| 8. 내가 나 자신을 좀 더 존중할 수 있으면 좋겠다. | 3 | 2 | 1 | 0 |
| 9. 나는 대체로 내가 실패자라고 느끼는 경향이 있다. | 3 | 2 | 1 | 0 |
| 10. 나는 나 자신에 대해 긍정적인 태도를 가지고 있다. | 3 | 2 | 1 | 0 |